Vehicle Maintenance 530SW90027A

Industry Overview

If your business is in the vehicle maintenance category, then the products you use on the vehicles and on your equipment, tools, hands, or floor might contain hazardous materials, and the waste generated by using these products might be hazardous waste. If you generate hazardous waste, you might be subject to Resource Conservation and Recovery Act (RCRA) requirements covering the generation, transportation, and management of hazardous waste.

Your business is classified under *vehicle maintenance* if you repair or maintain:

- Vans
- Trucks
- Vehicle Fleets
- Heavy equipment
- Farm equipment.

Vehicle maintenance operations that might generate hazardous waste include:

- Removing oil or grease
- Removing rust, dirt, or paint
- Repairing or rebuilding
- Refinishing or restoring
- Painting
- Replacing lead-acid batteries.

Hazardous Wastes from Vehicle Maintenance

Everyday mechanics and body repair personnel use products containing hazardous materials. Products containing materials that are hazardous to human health and the environment include:

Rust removers that contain strong acid or alkaline solutions

Carburetor cleaners that contain flammable or combustible liquids

Parts cleaners and degreasers that contain toxic chemicals

Paint thinners or reducers that are ignitable or contain toxic constituents

Motor oil and other petroleum products that are ignitable or contain toxic chemicals

Auto and truck batteries.

Waste that is generated as a result of using these products might be RCRA-regulated hazardous waste.

Table 1 lists typical processes/operations that use products that might contain hazardous materials and that probably generate hazardous waste. If you generate 100 kilograms (220 pounds or about half of a 55-gallon drum) or more of hazardous waste per month, you must fill out a Uniform Hazardous Waste Manifest when you ship hazardous waste off your property. The Manifest requires the proper Department of Transportation (DOT) description for each waste. Table 2 lists proper DOT shipping descriptions for a number of wastes that might be generated during vehicle maintenance operations. Table 1 and Table 2 are not comprehensive lists. If you suspect any waste you generate is hazardous, check with your state hazardous waste management agency or Regional EPA office.

There are special provisions in the regulations for spent lead-acid batteries and used oil. You do not have to use a Manifest when you ship used lead batteries that are destined for recycling or used motor oil that is destined for recycling. If, however, you are disposing of used oil yourself or are sending it off-site for disposal, you generally should handle it as hazardous waste because it is likely to be ignitable or toxic. Special requirements apply if you are burning used oil as fuel. Your state might have its own requirements for lead-acid batteries or used oil; check with your state hazardous waste management agency.

Waste Minimization

An effective waste minimization program can reduce the costs, liabilities, and regulatory burdens of hazardous waste management, while potentially enhancing efficiency, product quality, and community relations. Waste minimization techniques that can help you reduce the amount of hazardous waste that you generate include:

- Production planning and sequencing
- Process/equipment adjustment or modification
- Raw material substitution
- Loss prevention and housekeeping
- Waste segregation and separation
- Recycling.

Training and supervision of employees implementing waste minimization techniques is an important part of your successful program. Call the RCRA/Superfund Hotline toll-free at 800-424-9346 (or TDD 800-553-7672 for the hearing-impaired) for waste minimization information and publications.

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Table 1

Typical Vehicle Maintenance Operations: Materials Used and Hazardous Wastes that Might be Generated

Process/Operation	Materials Used	Typical Material Ingredient	General Types of Waste Generated
Degreasing	Degreasers (gunk), carburetor cleaners, engine cleaners, solvents, acids/alkalies, cleaning fluids	Petroleum distillates, aromatic hydrocarbons, mineral spirits, benzene, toluene, petroleum naphtha	Acid/alkaline wastes Spent Solvents Ignitable wastes Toxic wastes
Rust Removal	Naval jelly, strong acids, strong alkalies	Phosphoric acid, hydrochloric acid, hydrofluoric acid, sodium hydroxide	Acid/alkaline wastes
Paint Preparation	Paint thinners, enamel reducers, white spirits	Alcohols, petroleum distillates, oxygenated solvents, mineral spirits, ketones	Paint wastes Spent solvents Ignitable wastes Toxic wastes
Painting	Enamels, lacquers, epoxies, alkyds, acrylics, primers, solvents	Acetone, toluene, benzene, petroleum distillates, epoxy ester resins, methylene chloride, xylene, VM&P naphtha, aromatic hydrocarbons, methyl isobutyl, ketones	Paint wastes Spent solvents Ignitable wastes Toxic wastes
Spray Booth, Spray Guns, and Brush Cleaning	Paint thinners, enamel reducers, solvents, white spirits	Ketones, alcohols, toluene, acetone, isopropyl alcohol, petroleum distillates, mineral spirits	Paint wastes Spent solvents Toxic wastes
Paint Removal	Solvents, paint thinners, enamel reducers, white spirits	Acetone, toluene, petroleum distillates, methanol, methylene chloride, isopropyl alcohol, mineral spirits, alcohols, ketones, other oxygenated solvents	Paint wastes Spent solvents Toxic wastes
Tank Cleanout	Solvents or cleaners to wash out tanks, residues	Solvents, petroleum products in tanks	Tank draws containing toxic residues
Installing Lead-Acid Batteries	Used batteries of cars, trucks, boats, motorcycles, and other vehicles	Lead dross	Acid/alkaline wastes Batteries (lead-acid)

Table 2
Vehicle Maintenance Waste Descriptions[1]

Waste Type	Designations/Trade Names	DOT Shipping Name	Hazard Class	UN/NA ID Number
STRONG ACID/ALKALINE WASTES				
Ammonium Hydroxide	Ammonium Hydroxide, NH_4OH, Spirit of Hartshorn, Aqua Ammonia	Waste Ammonium Hydroxide (containing not less than 12% but not more than 44% ammonia)	Corrosive Material	NA2672
		(containing less than 12% ammonia)	ORM-A	NA2672
Hydrobromic Acid	Hydrobromic Acid, HBr	Waste Hydrobromic Acid (not more than 49% strength)	Corrosive Material	UN1788
Hydrochloric Acid	Hydrochloric Acid, HCl, Muriatic Acid	Waste Hydrochloric Acid	Corrosive Material	NA1789
Hydrofluoric Acid	Hydrofluoric Acid, HF, Fluorohydric Acid	Waste Hydrofluoric Acid	Corrosive Material	UN1790
Nitric Acid	Nitric Acid, HNO_2, Aquafortis	Waste Nitric Acid (over 40%)	Oxidizer	UN2031
		(40% or less)	Corrosive Material	NA1760
Phosphoric Acid	Phosphoric Acid, H_3PO_4, Orthophosphoric Acid	Waste Phosphoric Acid	Corrosive Material	UN1805
Potassium Hydroxide	Potassium Hydroxide, KOH, Potassium Hydrate, Caustic Potash, Potassa	Waste Potassium Hydroxide Solution Dry Solid, Flake, Bead, or Granular	Corrosive Material Corrosive Material	UN1814 UN1813
Sodium Hydroxide	Sodium Hydroxide NaOH, Caustic Soda, Soda Lye, Sodium Hydrate	Waste Sodium Hydroxide Solution Dry Solid, Flake, Bead, or Granular	Corrosive Material Corrosive Material	UN1824 UN1823
Sulfuric Acid	Sulfuric Acid, H_2SO_4, Oil of Vitriol	Waste Sulfuric Acid	Corrosive Material	UN1830
Chromic Acid	Chromic Acid	Waste Chromic Acid Solution	Corrosive Material	UN1755
SPENT SOLVENTS AND IGNITABLE OR TOXIC WASTES CONTAINING:				
Ethylene Dichloride*	Ethylene Dichloride, 1,2-Dichloroethane	Waste Ethylene Dichloride	Flammable Liquid[2]	UN1184
Benzene*	Benzene	Waste Benzene (benzol)	Flammable Liquid	UN1114
Toluene	Toluene	Waste Toluene (toluol)	Flammable Liquid	UN1294
Ethyl Benzene	Ethyl Benzene	Waste Ethyl Benzene	Flammable Liquid	UN1175
Chlorobenzene*	Chlorobenzene, Monochlorobenzene, Phenylchloride	Waste Chlorobenzene	Flammable Liquid	UN1134
Cresols*	o-Cresol, m-Cresol, p-Cresol, (m,p)-Cresol, (o,m,p)- Cresol	Waste Cresol	Corrosive Material	UN2076
Trichloroethylene*	TCE, Gemalgene, Lanadin, Lethurin, Nialk, Perm-a-Chlor	Waste Trichloroethylene	ORM-A	UN1710
Methyl Ethyl Ketone*	Methyl Ethyl Ketone, MEK, Methyl Acetone, Meetco, Butanone, Ethyl Methyl Ketone	Waste Methyl Ethyl Ketone	Flammable Liquid	UN1193
Chloroform*	Chloroform	Waste Chloroform	ORM-A	UN1888
Carbon Tetrachloride*	Perchloromethane Tetraform, Carbona Halon 104	Waste Carbon Tetrachloride	ORM-A	UN1846
Hexachloroethane*	Hexachloroethane	Waste Hexachloroethane	ORM-A	NA9037
White Spirits, Varsol	White Spirits, Mineral Spirits, Naphtha	Waste Naphtha	Flammable Liquid	UN2553
1,1,1-Trichloroethane	Aerothene TT, Chlorten, Chloroethane, Methyl Chloroform, Alpha T, Chlorotene	Waste 1,1,1-Trichloroethane	ORM-A	UN2831
Petroleum Distillates	Petroleum Distillates	Waste Petroleum Distillate	Flammable Liquid Combustible Liquid[3]	UN1268 UN1268

Table 2 (continued)
Vehicle Maintenance Waste Descriptions[1]

Waste Type	Designations/Trade Names	DOT Shipping Name	Hazard Class	UN/NA ID Number
PAINT WASTES WITH HEAVY METALS				
Heavy Metal paints or paint sludges with: Lead* Nickel* Chromium*	Heavy Metal Paints	Hazardous Waste, Liquid or Solid, NOS[4]	ORM-E	NA9189
OTHER WASTES				
Lead-Acid Batteries	Lead-Acid Batteries	Lead Dross (containing 3% or more free acid)	ORM-C	NA1794
Used Oil	Various petroleum products	Waste Petroleum Oil, NOS Waste Petroleum Oil, NOS	Combustible Liquid Flammable Liquid	NA1270 NA1270
Ignitable Wastes, NOS[4]	Ignitable wastes	Waste Flammable Liquid, NOS Waste Combustible Liquid, NOS Waste Flammable Solid, NOS	Flammable Liquid Combustible Liquid Flammable Solid	UN1993 NA1993 UN1325
Hazardous Waste, NOS		Hazardous Waste, Liquid or Solid, NOS	ORM-E	UN9189

* Toxicity Characteristic constituent. Any waste that results in a TCLP leachate containing a Toxicity Characteristic constituent equal to or above regulatory levels is hazardous.

1 These descriptions may change given variations in waste characteristics or conditions. Note that the DOT shipping name, hazard class, and UN/NA ID number do not necessarily correspond to RCRA hazardous waste categories.

2 A flammable liquid has a flash point below 100°F.

3 A combustible liquid has a flash point between 100°F and 200°F.

4 NOS - Not otherwise specified.